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THE NATIONAL POULTRY IMPROVEMENT PLAN

Emblem authorized for use by official State agencies and industry members to signify cooperation in the National Poultry Improvement Plan
REGISTERED U. S. PATENT OFFICE

UNITED STATES DEPARTMENT OF AGRICULTURE

The National Poultry Improvement Plan became operative July 1, 1935, with the approval of the Secretary of Agriculture and under the authority of an appropriation made by Congress (Public, No. 62, 74th Cong., H. R. 6718) for the Bureau of Animal Industry, United States Department of Agriculture, to be used in cooperation with State authorities in the administration of regulations for the improvement of poultry, poultry products, and hatcheries. Authority for the administration of the plan is now contained in the Department of Agriculture Organic Act of 1944. (78th Cong., 2d sess., H. R. 4278, Public 425.)

Developed with a view to the establishment of the poultry-breeding industry on as sound a basis as possible, the plan affords protection from unscrupulous competition and enables purchasers to buy with more confidence. The adoption of the plan in all parts of the United States should bring about an improvement in the quality of hatching eggs, baby chicks, breeding stock, and market products. Such results should cause poultry production to be more efficient and thus aid in making the poultry enterprise more profitable.

The objectives of the National Poultry Improvement Plan are to improve the breeding and production qualities of poultry and to reduce losses from pullorum disease. This is being accomplished by: (1) The development of more effective State poultry-improvement programs; (2) the identification of the quality of breeding stock, hatching eggs, and chicks by authorized terms that are uniform and applicable in all parts of the country; and (3) the establishment of an effective cooperative program through which newer knowledge and practical experience can be applied to the improvement of poultry and poultry products.

Acceptance of the plan is optional with States and individual members of the industry within the States. The plan is administered in each State by an official State agency cooperating with the Bureau of Animal Industry, United States Department of Agriculture. A list of the official State agencies may be obtained from this Bureau, and the names of members of the industry who are participating may be obtained from the official State agencies.

THE NATIONAL POULTRY IMPROVEMENT PLAN[1]

Prepared by specialists of the Bureau of Animal Industry, in cooperation with poultry leaders, poultry breeders, and members of the breeder and commercial hatchery industry

CONTENTS

	Page
Article 1. General regulations	1
Section 1. Definitions	1
Section 2. Administration and participation	4
Section 3. Terminology and advertising	5
Article 2. Breeding stages	7
Section 1. General provisions	7
Section 2. U. S. Approved breeding stage	8
Section 3. U. S. Certified breeding stage	9
Section 4. U. S. Record of Performance breeding stage	10
Section 5. U. S. Register of Merit breeding stage	18
Article 3. Performance test	19
Section 1. Meat production test	19
Article 4. Pullorum-Control and eradication classes	21
Article 4—Continued	
Section 1. General provisions	21
Section 2. U. S. Pullorum-Controlled class	24
Section 3. U. S. Pullorum-Passed class	25
Section 4. U. S. Pullorum-Clean class	25
Appendix	26
Official testing for pullorum disease	26
Recommended minimum procedure for bacteriological examination of pullorum reactors	29
Memorandum of understanding form	30
Procedure for making changes in the plan	31
Acceptance of conference recommendations by the Bureau of Animal Industry	33

ARTICLE 1. GENERAL REGULATIONS

SECTION 1. DEFINITIONS

REGULATION 1.—For the purposes of this plan the following words, phrases, names, and terms shall be construed, respectively, to mean—

Paragraph 1. **Plan.**—The National Poultry Improvement Plan.

Par. 2. **Turkey plan.**—The National Turkey Improvement Plan.

Par. 3. **Official State agency.**—The agency recognized by the Bureau of Animal Industry, United States Department of Agriculture, to cooperate in the administration of the plan within the State. It may be the State department of agriculture, State college of agriculture, State poultry-improvement board or association, or other agency recognized officially by the State government.

[1] The original edition of this plan was issued, in mimeographed form, in September 1935. It has been revised periodically in accordance with changes recommended by representatives of the cooperating States and approved by the Bureau of Animal Industry.

Washington, D. C.

Issued January 1938
Revised June 1950

Par. 4. **State inspector.**—An employee or authorized representative of the official State agency whose duties in connection with the plan comprise the official inspection of flocks, eggs, chicks, hatcheries, poultry premises, records, and methods employed in carrying on the work of the plan.

Par. 5. **R. O. P. supervisor.**—An employee or authorized representative of the official State agency whose duties in connection with the plan are to represent the official State agency in its supervision of U. S. R. O. P. (U. S. Record of Performance) and U. S. R. O. M. (U. S. Register of Merit) work and to vouch for the accuracy of all U. S. R. O. P. and U. S. R. O. M. records made by the U. S. R. O. P. breeders under his jurisdiction.

Par. 6. **R. O. P. inspector.**—An employee or authorized representative of the official State agency whose duties in connection with the plan are the inspection of flocks and records of U. S. R. O. P. breeders.

Par. 7. **Flock-selecting agent.**—A person who has taken a course of training in and passed an examination on (1) the selection of breeding stock for standard-bred and production qualities as prescribed by the State college of agriculture or other properly constituted State agency and (2) the plan provisions as applied in the State, and who has been authorized by the official State agency to do the flock-selecting work as provided for in the U. S. Approved and U. S. Certified breeding stages. As an emergency and to take care of individual cases only, the official State agency may at its discretion, authorize flock-selecting agents who have not taken the specified course of training. Only those persons who have demonstrated to the official State agency through work in the field that they are capable of doing satisfactory selecting work may be so authorized.

Par. 8. **State pullorum tester.**—An employee or authorized representative of the official State agency, who has training in pullorum testing technique, a working knowledge of the plan provisions as applied in the State, and other qualifications necessary to do the pullorum-testing work as provided for in the plan; however, no person can qualify as a State pullorum tester for work in a hatchery in which he has a financial interest, either entire ownership, partial ownership, or employment.

Par. 9. **Pullorum-testing agent.**—A person who has taken a course of training in and passed an examination on (1) pullorum testing as prescribed by the State livestock sanitary authorities or officials of the State college of agriculture and (2) the plan provisions as applied in the State, and who has been authorized by the official State agency to do the pullorum-testing work. As an emergency and to take care of individual cases only, the official State agency may, at its discretion, authorize pullorum-testing agents who have not taken the specified course of training. Only those persons who have demonstrated to the official State agency through work in the field that they are capable of doing satisfactory testing work may be so authorized.

Par. 10. **Blood collector.**—A person who has been trained in the proper method of collecting blood samples for the pullorum disease test, who has passed an examination on the plan provisions as applied in the State, and who has been authorized by the official State agency to do the blood-collecting work.

Par. 11. **Eggs and hatching eggs.**—Chicken eggs and chicken hatching eggs.

Par. 12. **Baby chicks.**—Chicks that have not been fed or watered.

Par. 13. **Started chicks.**—Chicks that have been fed or watered.

Par. 14. **Breeding stock.**—Chickens to be used for breeding purposes.

Par. 15. **Flock.**—All chickens of one breed or variety on the same premises, except that cross-mated birds as provided in article 2, section 1, paragraph 4, page 7, shall be considered as one flock.

Par. 16. **Flock owner.**—A person, firm, or corporation maintaining a breeding flock of chickens.

Par. 17. **Hatchery.**—Hatchery equipment on one premises operated or controlled by any person, firm, or corporation producing chicks.

Par. 18. **U. S. R. O. P.**—U. S. Record of Performance.

Par. 19. **U. S. R. O. M.**—U. S. Register of Merit.

Par. 20. **Official label.**—A label, obtained through or approved by the official State agency, on which are indicated the product, the breeding stage, and the pullorum class.

Par. 21. **Crossbred hatching eggs and chicks.**—Hatching eggs and chicks produced:

(*a*) By crossing two different breeds or varieties; or

(*b*) By crossing first generation poultry resulting from the combination of two different breeds or varieties with another and different breed or variety; or

(*c*) By crossing the first generation poultry resulting from the combination of two different breeds or varieties with the first generation poultry resulting from the combination of two other different breeds or varieties.

Par. 22. **Inbred.**—The first generation poultry, chicks, or eggs, produced by a mating of poultry of known relationship, related to the degree of first cousins or closer.

Par. 23. **Inbred line.**—A group of inbred poultry, or the chicks or eggs, resulting from at least four generations of inbreeding. The poultry constituting the line must be individually identified as to origin and so interrelated that the mating of any pair within the line would result in progeny with an amount of inbreeding exceeding that resulting from three successive generations of full brother-sister matings (coefficient of more than 50 percent).

Par. 24. **Incrossbred.**—The first generation poultry, chicks, or eggs produced:

(*a*) By crossing two inbred lines of different breeds or varieties; or

(b) By crossing first-generation poultry resulting from the combination of two inbred lines of different breeds or varieties with another inbred line of different breed or variety; or

(*c*) By crossing the first-generation poultry resulting from the combination of two inbred lines with the first-generation poultry resulting from the combination of two other inbred lines when each line used is of different breed or variety than any other used.

First-generation poultry produced by crossing two inbred lines of the same breed or variety may be used in lieu of an inbred line of that breed or variety.

SECTION 2. ADMINISTRATION AND PARTICIPATION

REGULATION 1.—The official State agency shall conduct the inspection work called for in the plan efficiently and shall direct, administer, supervise, and be responsible for all the work done on flock selection in the various breeding stages and on testing for pullorum disease as provided for in the plan.

If, in the opinion of the Bureau of Animal Industry, an official State agency is not properly administering the National Poultry Improvement Plan, the Bureau may, after providing such agency an opportunity for an informal hearing, terminate its cooperation with the agency.

REGULATION 2.—All applicants for participation in the National Poultry Improvement Plan shall demonstrate to the satisfaction of their official State agency, prior to their admission to such participation by the agency, that their facilities, personnel, and practices are adequate for carrying out the applicable provisions of the National Poultry Improvement Plan.

REGULATION 3.—Any person, firm, or corporation desiring to participate in the plan except flockowners who are affiliated with participating hatcheries shall sign an agreement with the official State agency.

REGULATION 4.—With the approval of the official State agency, hatching-egg and chick dealers may participate in the plan and enjoy all the privileges of participating hatcheries in the handling of hatching eggs and chicks, provided all the applicable requirements for participating hatcheries are fully and completely complied with.

REGULATION 5.—Participation in any phase of the plan shall be construed as maintaining supervision and compliance throughout the 12 months of the year. (It is understood that a participant may withdraw from participation or that his agreement may be terminated by the official State agency for cause.)

REGULATION 6.—When more than one hatchery located within a State is operated under the same name, ownership, or management, none of these hatcheries may participate in the plan unless all of them participate in the same breeding stage and pullorum class. In the event that any person, firm, or corporation has nonparticipating hatcheries in other States, no chicks or hatching eggs shall be shipped or delivered to the participating hatcheries from the nonparticipating hatcheries.

REGULATION 7.—Participants shall not purchase, receive, offer for sale, or be a dealer in or agent for breeding stock, hatching eggs, or chicks, other than those produced under the plan, except with the written permission of the official State agency. Permission may be granted by the official State agency to purchase hatching eggs, chicks, or breeding stock not produced under the plan for use in breeding or hatching-egg supply flocks. In such cases a report shall be made to the official State agency on each shipment received and to whom delivered. With the permission of the official State agency, market eggs may be bought and sold.

REGULATION 8.—Chicks and hatching eggs of identical U. S. breeding stages and pullorum classes may be exchanged or bought for resale by members of the industry who are participating in the same

phases of the plan. Participants may purchase hatching eggs or chicks of a higher stage or class than those which they produce, but such products may not be sold as of the higher stage or class.

Regulation 9.—Noncompliance with the provisions of the plan which is not corrected within a reasonable time shall bar any participant from further participation for a period of 2 years. Such action shall not be taken until a thorough investigation and hearing have been conducted by the official State agency.

Regulation 10.—All birds in participating flocks shall be identified with official sealed and numbered bands. All bands shall be obtained through, or be approved by the official State agency, and all purchases of such shall be authorized by and recorded with the official State agency.

Regulation 11.—Poultry laying and breeding houses shall be kept clean and in good condition. The land in the immediate vicinity of the poultry laying and breeding houses shall be kept in sanitary condition.

Regulation 12.—Each participating hatchery shall be inspected at least once in the period January 1 to June 30, inclusive. At least one additional inspection shall be made for each participating hatchery in operation in the period between July 1 and December 31.

Regulation 13.—Hatcheries and all equipment shall be kept in strictly sanitary condition. After each hatch all incubators must be thoroughly cleaned and disinfected by an officially recognized method of spraying or fumigating.

Regulation 14.—A participating hatchery may not brood or keep started chicks or poultry of any age in the same room in which the incubators are located.

Regulation 15.—The management of a hatchery participating in the plan shall maintain the identity of hatching eggs being incubated, including those that are being custom-hatched, and shall keep accurate records concerning the name and address of each flock owner; the number of eggs received from each flock owner; the name and address of each purchaser, except those who make small cash purchases at the plant; the number, hatchery grade, if any, breed and variety; and date of shipment or delivery of all chicks and hatching eggs. These records shall be open for official inspection at all times. Eggs received and chicks hatched shall be subject to inspection at all times.

Regulation 16.—Each consignment of hatching eggs and baby chicks shipped interstate from one participant to another shall be accompanied or followed within 3 days by the purchaser's copy of Form N. P. I. P. 15, "Report of Sales of Hatching Eggs, Chicks, and Poults, to Hatcheries."

Regulation 17.—Shipment of chicks shall be made in approved types of chick boxes properly ventilated and securely tied, and chicks shall be shipped to reach the ultimate purchaser within the time limit prescribed by the United States Postal Regulations.

SECTION 3. TERMINOLOGY AND ADVERTISING

Regulation 1.—All chicks sold or offered for sale under the plan terminology shall be normal and representative of the breed and variety.

Regulation 2.—Flocks, hatching eggs, hatcheries, and chicks that have met the requirements of both a breeding stage and a pullorum class of the plan shall be designated in accordance with the stage and class attained as follows: U. S. Approved, Pullorum-Controlled; U. S. Approved, Pullorum-Passed; U. S. Approved, Pullorum-Clean; U. S. Certified, Pullorum-Controlled; U. S. Certified, Pullorum-Passed; or U. S. Certified, Pullorum-Clean.

Matings, hatching eggs, chicks, and birds that have met the requirements of the U. S. R. O. P. breeding stage and a pullorum class of the plan shall be designated in accordance with the class attained as follows: U. S. R. O. P., Pullorum-Controlled; U. S. R. O. P., Pullorum-Passed; or U. S. R. O. P., Pullorum-Clean.

Regulation 3.—The use of the official terminology or any portion thereof of any particular breeding stage or pullorum class of the plan in which members of the industry are participating shall be limited to hatching eggs, chicks, and breeding stock that meet at least the minimum requirements of that particular stage or class when produced by those under the jurisdiction of the official State agency.

Regulation 4.—Each sale or shipment of breeding stock, hatching eggs, or chicks shall be designated by official labels or tags specifying number in shipment, breeding stage, and pullorum class in accord with the regulations of the plan, except that chicks that are seconds, culls, rejects, or abnormal for breed and variety characteristics shall not be sold or offered for sale under official labels. (See regulation 1 p. 5, and regulation 10, p. 6.) With the approval of the official State agency, the hatching-egg supply flock owner of a participating hatchery need not officially label each consignment of hatching eggs delivered to the hatchery.

Regulation 5.—Started chicks shall be labeled as such, and all the chicks in each lot sold or offered for sale shall be of the same age (hatching date) unless otherwise specified.

Regulation 6.—The National Poultry Improvement Plan emblem (see cover page), the official terms and various designs illustrative of the breeding stages and the pullorum classes (figs. 1 to 7) may be used only by participants who have not met the specific requirements.

Regulation 7.—The use of the National Poultry Improvement Plan emblem, which appears on the cover of this publication, shall be restricted to participants who are taking part in both the breeding and the pullorum disease control phases of the plan.

Regulation 8.—In each case where the National Poultry Improvement Plan emblem or other reference to participation in the plan is used in advertising, the breeding stage and pullorum classification shall be shown.

Regulation 9.—In all labeling and advertising where participation in one phase of the plan is mentioned, nonparticipation in the other must be given equal prominence, e. g., "U. S. Pullorum-Clean. Breeding not under official supervision."

Regulation 10.—Chicks and hatching eggs produced under the rules and regulations of the plan shall lose their identity under the plan terminology when they are purchased for resale by nonparticipants.

Regulation 11.—All advertising must be in accordance with the rules and regulations of the plan, the official State agency, and the

Trade Practice Rules of the Federal Trade Commission for the Baby Chick Industry. In the event that the advertising of any participant is found to be in violation of this regulation, the participant shall be placed upon probation for a period of 2 years during which he shall submit every proposed piece of advertising to the official State agency for approval before it is printed or used. The failure of a participant on probation to submit advertising for prior approval will be sufficient cause for dropping him from participation.

Regulation 12.—A participant using in his advertising the terms "R. O. P. sired," "R. O. P. pedigreed sired," "R. O. P. mated," or any other terms or letters of similar meaning or implication shall clearly show the breeds and the approximate percentage or proportion of the birds in flocks supplying him with hatching eggs or chicks of each breed that are of that quality. Participants may use these terms only when the males siring the chicks so described have been officially leg-banded as U. S. R. O. P. males. Participants who are not R. O. P. breeders shall not use advertising implying R. O. P. participation and shall not otherwise imply R. O. P. participation.

Regulation 13.—Where descriptive terms are used in advertising, in addition to the official terminology of the plan, such terms shall be clearly explained. (E. g., if more than one hatchery grade of U. S. Approved chicks is offered for sale and the chicks in one of such grades are sired entirely by U. S. R. O. P. males, it is sufficient and proper to describe such a grade as "U. S. Approved chicks sired by U. S. R. O. P. males.")

Regulation 14.—The use of the word "accredited" to indicate breeding improvement or disease eradication or control or its use in any other way is prohibited.

ARTICLE 2. BREEDING STAGES

SECTION 1. GENERAL PROVISIONS

Paragraph 1. Participation in one of the pullorum classes shall be a prerequisite to participation in any of the breeding stages of the plan, except as provided for in paragraph 8, page 12.

Par. 2. A participant in a breeding stage of the plan shall participate in a breeding stage with all of his chicken breeding and hatchery operations.

Par. 3. A new or nonstandard breed or variety may be accepted in the U. S. Approved and U. S. Certified breeding stages of the plan only when a suitable standard for the breed or variety has been approved by a joint committee of the National Poultry Improvement Plan and the American Poultry Association. With the permission of the official State agency, a limited number of chicks may be distributed to selected patrons, for a period not to exceed 3 years, for the purpose of obtaining large scale field trials in the development of new breeds.

Par. 4. With the approval of the official State agency, crossbred or incrossbred hatching eggs and chicks, as defined in section 1, paragraphs 21 and 24, page 3, may be produced and sold by participants in the plan. Flocks from which these products are produced, shall be designated as U. S. Approved crossmated or U. S. Certified crossmated, dependent upon the breeding of the males, or U. S. Approved

incrossmated. Hatching eggs and chicks from such flocks shall be designated as U. S. Approved crossbred, U. S. Certified crossbred, and U. S. Approved incrossbred, respectively. In crossmated flocks, the breed of the male and the breed of the female used in the crosses shall be designated. The breed of the male shall be indicated first.

Par. 5. Back-cross and other matings of crossbred stock not covered by any specific provisions may be made but the progeny produced from such matings shall not be advertised or sold without permission from the official State agency and the Bureau of Animal Industry.

Par. 6. When more than one variety or cross is kept on a farm ample provision must be made to keep these varieties or crosses and their eggs separate in a manner satisfactory to the official State agency.

Par. 7. The selection of birds in a flock to qualify as U. S. Approved or U. S. Certified by a State inspector shall be regarded as one official inspection, provided a complete inspection is made and so reported.

Par. 8. All eggs used in any breeding stage of the plan shall be reasonably uniform in size and shape and sound in shell. In the case of all white-egg breeds, U. S. Approved hatching eggs shall be reasonably free from tints, and eggs of other U. S. breeding stages shall be free from tints.

Par. 9. The minimum hatching egg weight for the U. S. Approved and U. S. Certified stages shall be $1^{11}/_{12}$ ounces each, except that durthe months June through November, eggs weighing as low as $1^{10}/_{12}$ ounces each may be set for the production of chicks designated as "broiler chicks." These minimum egg weight requirements shall not apply to the Cornish breed, or breeds and varieties for which the standard weight of the hen is less than 4 pounds.

SECTION 2. U. S. APPROVED BREEDING STAGE

Paragraph 1. **U. S. Approved Flocks.**—These flocks shall meet the following requirements:

(*a*) Females shall be rigidly selected once each year for constitutional vigor and for egg production, such selected females to combine standardbred and production qualities to a reasonably high degree; males shall be selected especially for constitutional vigor and standardbred qualities. Crossmated and incrossmated flocks shall be well selected for good vitality, growth, market quality, egg production, feathering, and egg weight; (*b*) the selection of the flocks shall be approved by a State inspector.

Reg. U. S. Patent Office

(GREEN)

FIGURE 1.—Design authorized to identify U. S. Approved hatching eggs, chicks, flocks, and hatcheries.

Par. 2. The method of selecting poultry breeding stock prescribed by the State college of agriculture or other properly constituted State agency shall serve as the basis for the selection of males and females. All birds to be used in U. S. Approved flocks shall be selected by a State inspector or by a flock-selecting agent.

Par. 3. All birds selected for U. S. Approved flocks shall be banded at the time of selection with sealed and numbered leg bands obtained

through the official State agency. With the permission of the official State agency, individually wing-banded females on an R. O. P. breeder's own farm need not be leg-banded for the production of U. S. Approved and U. S. Certified chicks, provided (1) all the females on the premises are individually wing-banded, and (2) that a complete record of the wing-band numbers of the females in each pen is made at the time of selecting and testing. Birds rejected by the State inspector or by the flock-selecting agent shall have their tails clipped, have their leg bands removed, and be kept separate from the breeding flocks. The selection of birds for a U. S. Approved flock shall be completed at least 10 days before any eggs are saved for hatching purposes, except that this 10-day interval shall not be required if all males found in the flock are approved.

Par. 4. No birds except those with sealed and numbered official leg bands or wing bands as provided in paragraph 3, shall be allowed in the breeding flocks, and no male birds shall be allowed in any other mature flock on the same premises except in U. S. Certified or U. S. R. O. P. flocks. This shall not be construed as permitting a U. S. Approved and a U. S. Certified flock of the same breed and variety on one farm.

Par. 5. Before any flock other than one affiliated with a participating hatchery may be recognized as a U. S. Approved flock, it must be inspected and approved by a State inspector. Each year at least 15 percent of the hatchery flocks supplying eggs to a U. S. Approved hatchery and at least 15 percent of the flocks selected by each flock-selecting agent shall be inspected and approved by a State inspector. The State inspector shall determine which flocks shall be inspected, and the inspection shall include the physical examination of a sufficient number of males and females to satisfy himself that the flock is worthy of approval.

Par. 6. **U. S. Approved hatching eggs.**—Such eggs shall come only from U. S. Approved flocks or a higher U. S. breeding stage and shall weigh at least $1\frac{11}{12}$ ounces each, except as provided for in par. 9, page 8.

Par. 7. **U. S. Approved chicks.**—They shall be hatched only from U. S. Approved eggs and in U. S. Approved hatcheries.

Par. 8. **U. S. Approved hatcheries.**—These hatcheries may sell only hatching eggs and chicks produced under the breeding stages of the plan. They may sell U. S. Certified hatching eggs and chicks of varieties or crosses other than those sold as U. S. Approved.

SECTION 3. U. S. CERTIFIED BREEDING STAGE

Paragraph 1. **U. S. Certified flocks.**—These flocks shall fulfill all the requirements of U. S. Approved flocks and shall be mated to U. S. R. O. P. males (see par. 16, p. —). For the first 2 years of U. S. R. O. P. work carried on by any breeder, the males for his own flock need not be U. S. R. O. P. males but must be individually pedigreed and of breeding which meets the qualifications for U. S. R. O. P. males. All such males may be used in subsequent breeding seasons if reinspected and certified by the official State agency. The males and females shall be of at least qualifying standard weight as designated by the official State agency in cooperation with the State college of agriculture or other properly constituted State agency, which gives the prescribed

training in selecting poultry breeding stock. The males and females shall be selected by either a State inspector or a flock-selecting agent once each year, and if selected by a flock-selecting agent, at least 50 percent of the flocks selected by each agent shall be inspected by a State inspector. This flock inspection shall include the examination of a sufficient number of males and females and the checking of the wing bands on a sufficient number of males to satisfy the State inspector that the flock is worthy of certification.

Reg. U. S. Patent Office

(YELLOW)

FIGURE 2.—Design authorized to identify U. S. Certified hatching eggs, chicks, flocks, and hatcheries.

With the approval of the official State agency, U. S. Certified flocks may be mated to Canadian R. O. P. males, provided such males meet U. S. R. O. P. qualifications.

Par. 2. **U. S. Certified hatching eggs.**—Such eggs shall come only from U. S. Certified flocks and shall weigh at least $1\frac{11}{12}$ ounces each and average at least 24 ounces to the dozen, except as provided for in paragraph 9, page 8.

Par. 3. **U. S. Certified chicks.**—They shall be hatched only from U. S. Certified eggs and in U. S. Certified hatcheries, except that a hatchery may produce and sell U. S. Certified chicks of one breed or variety and U. S. Approved of another breed or variety, in which case the hatchery shall be recognized as a U. S. Approved hatchery.

Par. 4. **U. S. Certified hatcheries.**—These hatcheries may sell only U. S. Certified or U. S. Certified crossbred hatching eggs and chicks, except that a U. S. Certified hatchery may sell U. S. Approved crossbred hatching eggs and chicks. A hatchery may not sell U. S. Certified crossbred chicks and U. S. Approved crossbred chicks of the same cross.

SECTION 4. U. S. RECORD OF PERFORMANCE BREEDING STAGE

Paragraph 1. U. S. Record of Performance embraces records of egg production, egg weight, and body weight made on the breeder's premises under official supervision and similar records made at officially conducted egg-laying tests, State colleges of agriculture, and State and Federal experiment stations, when such records are passed on by the official State agency and when the individual birds meet other U. S. R. O. P. requirements, except that the birds produced by State colleges of agriculture and State and Federal experiment stations may be recognized as U. S. R. O. P. only for the use of U. S. R. O. P. breeders in their breeding work. With the approval of the official State agency, Canadian R. O. P. males may be used by U. S. R. O. P. breeders, provided such males meet U. S. R. O. P. qualifications.

Reg. U. S. Patent Office

(BLUE)

FIGURE 3.—Design authorized to identify U. S. R. O. P. hatching eggs, chicks and breeding stock.

Par. 2. **U. S. R. O. P. breeder.**—A U. S. R. O. P. breeder is a person, firm, or corporation maintaining a flock of chickens in accordance with the provisions of the U. S. R. O. P. breeding stage.

Par. 3. Eligibility for U. S. R. O. P. entry shall be confined to

any standard breed or variety or to any other breed or variety recognized by the United States Record of Performance Federation. In addition the entry shall be from flocks of breeding satisfactory to the official State agency.

Par. 4. After the 1950–51 trap-nest year, a breeder's U. S. R. O. P. entry shall consist of a minimum of 25 percent individually pedigreed candidates the third year in U. S. R. O. P., a minimum of 50 percent the fourth year, and a minimum of 75 percent thereafter. An exception may be made if a breeder's pedigreed flock is wiped out by disease or disaster.

Par. 5. The candidate flock or flocks of a U. S. R. O. P. breeder must be trap-nested at regular intervals every day for a period of either 300 or 365 days, the period used being agreed upon by the official State agency and the breeder prior to the beginning of the trap-nest year. However, the official State agency may approve as a substitute for daily trap-nesting of U. S. R. O. P. candidates: (*a*) 6-day-a-week trap-nesting (the official egg record to be computed by multiplying the trap-nest record by 7/6), (*b*) 5-day-a-week trap-nesting (the official egg record to be computed by multiplying the trap-nest record by 7/5); or (*c*) 3-day-a-week trap-nesting after a breeding flock has been established for a period of 2 years (the official egg record to be computed by multiplying the trap-nest record by 7/3). Each U. S. R. O. P. candidate shall be banded with a sealed and numbered offical leg band. No females other than those entered in or qualified for U. S. R. O. P. shall be allowed in the pens where U. S. R. O. P. candidates are being trap-nested.

Par. 6. The trap-nests used in U. S. R. O. P. work shall be of an approved type and shall be kept in perfect working order at all times. The poultry plant and all egg-production records shall be subject at all times to unannounced inspections by a State inspector. At the time of each inspection, the inspector shall have sole charge of the trap-nests and of eggs laid. The egg production, pedigree, and sales records shall be open at all times to examination by the supervisor or inspector. The breeder shall send to his supervisor, not later than the tenth day after every second month, a complete record of all U. S. R. O. P. candidate egg-production records and egg weights for the previous 2-month period.

Par. 7. All birds trap-nested on the premises of a U. S. R. O. P. breeder shall be considered as entered under U. S. R. O. P. supervision with the following exceptions: (*a*) Preliminary trap-nesting of all birds may be permitted during the first 30-day period. (*b*) An additional preliminary trap-nesting period of pedigreed candidates for three calendar months may be permitted to allow more time to select and enter candidates on a family basis; however, if a pedigreed candidate is continued in U. S. R. O. P. all her full sisters trap-nested beyond the 30-day period as candidates for U. S. R. O. P. must be considered as having been entered. (*c*) Candidates that react to the test for pullorum disease when officially tested within 4 months after trap-nesting has begun will not be considered as entered. (*d*) All qualified U. S. R. O. P. hens may be trap-nested. (*e*) With the written approval of the official State agency, a U. S. R. O. P. breeder may keep birds in individual laying cages or trap-nest inbred or other birds of experimental breeding, provided the trap-nest records of such

birds are not referred to in advertising. (*f*) He may, with the approval of the official State agency, trap-nest any other breed or variety he is developing as a basis for future U. S. R. O. P. work. (*g*) With the approval of the official State agency, hens in their second or subsequent production years may be privately trapped to complete lifetime egg records that were begun before U. S. R. O. P. work was undertaken. (*h*) With the approval of the official State agency, entire pens of candidates affected by a contagious disease may be withdrawn provided the owner sells them for slaughter as a disease-control measure.

Par. 8. An R. O. P. breeder who fails to qualify for one of the pullorum classes may continue to participate in the R. O. P. breeding stage, as long as he satisfies the official State agency that he is proceeding as rapidly as possible to qualify for one of the pullorum classes. During this period, each sale of hatching eggs, baby chicks, and breeding stock must first be approved by the official State agency.

Par. 9. All flocks shall be inspected at least five times a year. One or more consecutive days of inspection by the R. O. P. inspector shall represent a single inspection. In the event of an outbreak of contagious disease in a poultry plant where U. S. R. O. P. work is carried on, inspection may be temporarily suspended.

Par. 10. Females shall have laid either at the rate of at least 60 percent (180 eggs) for a qualifying period of 300 days or 200 or more eggs during a 365-day qualifying period. In the case of egg-laying-test pullets and hens, the qualifying period shall be either 300 days or the duration of the official laying-test year. To facilitate the preparation of the annual R. O. P. summary the R. O. P. supervisor may close all records by November 30, but birds that have not completed their qualifying period may be permitted to do so and be included in the following year's summary.

Par. 11. The qualifying average egg weight for pullets shall be 24 ounces to the dozen and for yearling or older hens shall be 25 ounces to the dozen. Official egg weights shall be based on the average of not less than eight individual egg weights. Eggs shall be weighed either four consecutive days each month, or on the same day each week for any four consecutive months between January 1 and July 1 previously indicated by the breeder. When the 3-day-a-week trap-nesting system is used, eggs shall be weighed three consecutive days each month for five consecutive months or on the same day each week for any four consecutive months between January 1 and July 1, previously indicated by the breeder. The inspectors' weights taken during the official weigh period shall be included in computing the average and the number of weights. Additional eggs may be weighed after the official weigh period to meet the minimum number of eight egg weights required for qualification.

Par. 12. The U. S. R. O. P. breeder and the R. O. P. inspector shall record the leg-band numbers of all U. S. R. O. P. candidates showing a standard disqualification, laying eggs of undesirable shape or shell texture, or laying tinted eggs in the case of white-egg breeds. Such birds shall not qualify as U. S. R. O. P. females. The R. O. P. inspector may remove the U. S. R. O. P. leg band from any bird which develops these defects subsequent to qualification.

Par. 13. All females shall be of at least qualifying body weight for

hens and be reasonably good representatives for each breed or variety as designated in the American Standard of Perfection, allowance being made for the standard weight tolerance except that 3 pounds' tolerance shall be allowed for Plymouth Rocks, Jersey Giants, and breeds in the English and Asiatic classes. The following table gives the specific minimum qualifying female body weights for breeds and varieties participating in the U. S. R. O. P. breeding stage in 1948–49.

	Pounds
Ancona	3.5
Australorp	3.5
Cornish	5.0
Jersey White Giant	7.0
Langshan	4.5
Leghorn	3.5
Minorcas: White and Buff	4.5
New Hampshire	4.5
Orpington	5.0
Plymouth Rock	4.5
Rhode Island Red	4.5
Wyandotte	4.5

Each female shall be weighed between January 1 and June 1 by the R. O. P. inspector and this weight shall be used for the purpose of qualifying the bird for U. S. R. O. P. At the option of the breeder and the official State agency, one additional weight taken by the breeder during the same period may be used in determining the official body weight.

Par. 14. All birds meeting the above requirements with respect to egg production, egg weight, eggshell color and texture, egg shape, body weight, and freedom from standard disqualifications, and that are reasonably good representatives of the breed or variety as designated in the American Standard of Perfection, shall be considered as having met the requirements for U. S. R. O. P. females. Before such birds may be sold as U. S. R. O. P. females or used in U. S. R. O. P. matings or flock matings of U. S. R. O. P. males and U. S. R. O. P. females, they shall be examined and banded by the R O. P. inspector or supervisor with a U. S. R. O. P. sealed, official leg band.

Par. 15. **U. S. R. O. P. qualification through egg-laying tests.**— The U. S. R. O. P. breeder who desires to have his laying-test entry considered as entered in U. S. R. O. P. shall make application in writing to the manager of the test not later than January 1. The manager of the laying test will be expected to keep a special record on such entries on Form N. P. I. P. 17, Report of Birds Entered in Egg-Laying Tests by U. S. R. O. P. Breeder. At the end of the laying-test year the birds shall be examined for final qualification and officially leg-banded by the R. O. P. inspector or supervisor in the State to which the birds are sent from the test. Only those entries of U. S. R. O. P. breeders who are doing home trap-nesting of pullets of the same breed and variety under R. O. P. supervision are eligible for U. S. R. O. P. entry and qualification. Necessary records will be forwarded to the breeder and the supervisor by the laying-test manager.

Egg weights for laying-test entries will be based on the average weight of eggs laid on three consecutive days during the first full week of each month from January to May, inclusive. Additional eggs

may be weighed after the 5-month period to meet the minimum number of eight egg weights required for qualification in R. O. P.

Par. 16. **U. S. R. O. P. males.**—Males produced from U. S. R. O. P. chicks may be qualified as U. S. R. O. P. males for participants in the plan only. To qualify, such males shall have passed the final individual inspection of a State inspector not earlier than at 6 months of age, except that a flock-selecting agent may be permitted to select and leg-band U. S. R. O. P. males for use in U. S. Approved and U. S. Certified flocks. The State inspector shall examine a sufficient number of the males selected and leg-banded by each flock-selecting agent to determine that the selection was satisfactory. Each male passed by an inspector or flock-selecting agent shall possess strong constitutional vigor and be a good representative of the breed and variety as designated in the American Standard of Perfection, shall be free from standard disqualifications, and shall be banded with a U. S. R. O. P. sealed and numbered official leg band when selected. At the time of selection and banding the inspector or flock-selecting agent shall make a complete record of the wing- and leg-band numbers of each male banded. Males that are candidates for U. S. R. O. P. qualification may be dubbed, provided each bird has been officially examined by a State inspector, or an authorized flock-selecting agent and passed in respect to comb disqualifications. Such birds must otherwise comply with all regulations pertaining to the qualifications of U. S. R. O. P. males not earlier than 6 months of age. A record of the number of males passed for dubbing in each flock, the breeder from whom the males were procured, and the complete wing-band numbers of those disqualified shall be made and sent to the official State agency within 10 days after such examination and dubbing. Privately pedigreed males referred to in paragraph 17 and the non-R. O. P. males referred to in paragraph 23 that have met the progeny-test requirements for U. S. R. O. M. males shall be considered as having met the requirements for U. S. R. O. M. and U. S. R. O. P. males and may be officially leg-banded as such.

Par. 17. **U. S. R. O. P. matings.**—These matings shall be comprised of only U. S. R. O. P. females mated to a U. S. R. O. P. male. The breeder may place in the U. S. R. O. P. mating females that are not U. S. R O. P., provided he does not sell pedigreed eggs, chicks, or stock from such females as U. S. R. O. P. products.

During the first year of U. S. R. O. P. breeding work carried on by any breeder, the male used in U. S. R. O. P. matings need not be a U. S. R. O. P. male, provided he is of equal pedigree. Such males may be used in similar matings during the second year of U. S. R. O. P. breeding work, if reinspected and passed by the inspector, but not thereafter unless they qualify as U. S. R. O. M. males. No eggs or progeny from such a mating shall be sold as U. S. R. O. P. products, except that male offspring produced during the first breeding year may be permitted to head U. S. Certified flocks in the State where produced or to head U. S. R. O. P. matings on the breeder's premises.

Par. 18. Only one male shall be allowed in a single U. S. R. O. P. mating at any one time, and the date of entry and removal of males shall be properly recorded.

Par. 19. All breeding hens in U. S. R. O. P. matings shall be trapnested during the breeding season and all egg-production records shall be submitted to the official State agency.

Par. 20. **U. S. R. O. P. single-male candidate matings.**—Females entered in U. S. R. O. P. may be mated to a U. S. R .O. P. male for the purpose of obtaining progeny records a year earlier than would otherwise be possible. During the first year of U. S. R. O. P. breeding work carried on by any breeder, the male used in a U. S. R. O. P. candidate mating need not be a U. S. R. O. P. male, provided he is of equal pedigree. Such males may be used in similar matings during the second year of U. S. R. O. P. breeding work, if reinspected and passed by the inspector, but not thereafter unless they qualify as U. S. R. O. M. males. The breeder shall send the R. O. P. supervisor a complete report on the birds comprised in this mating, the number of eggs incubated, and the wing-band numbers of the chicks hatched and banded. Sealed and numbered official wing bands marked "Cand." shall be used to differentiate such chicks from U. S. R. O. P. chicks. The male progeny of the females which qualify as U. S. R. O. P. females may qualify as U. S. R. O. P. males provided they meet all the requirements of U. S. R. O. P. males except that of being produced from U. S. R. O. P. chicks.

Par. 21. **Flock matings of U. S. R. O. P. males and females.**—Such matings may properly be maintained by U. S. R. O. P. breeders provided the hatching eggs and chicks produced therefrom are not represented, sold, or identified as U. S. R. O. P. products. Chicks from these matings may properly be identified with wingbands stamped with the words "Flock Mating" or abbreviations thereof.

Par. 22. **U. S. R. O. P. candidate flock matings.**—These matings shall be comprised of U. S. R. O. P. candidate females mated to U. S. R. O. P. males. The breeder shall send the R. O. P. supervisor at the end of each month, a complete report on the birds comprised in these matings, the number of eggs incubated and sold, and the number of chicks hatched and sold. Hatching eggs or chicks sold as coming from such matings may be properly identified by marking the eggs or wing-bands with the words "Flock Candidate" or abbreviations thereof.

Par. 23. **Trial matings.**—With the approval of the official State agency a U. S. R. O. P. breeder may make trial matings in which a non-U. S. R. O. P. male may be mated to either U. S. R. O. P. or non-U. S. R. O. P. females. No hatching eggs, baby chicks, or breeding stock may be sold from such matings. The females from such matings may be entered as U. S. R. O. P. candidates, provided they are reasonably good representatives of the breed or variety as designated in the American Standard of Perfection. Such males and females, including those females referred to in the second sentence of paragraph 17, page 14 that meet the progeny-test requirement for U. S. R. O. M. shall be considered as having met the requirements for U. S. R. O. M. The sires meeting U. S. R. O. M. requirements may be officially leg banded as U. S. R. O. P. males provided they are free from standard disqualifications. The females meeting U. S. R. O. M. requirements may be leg-banded as U. S. R. O. P. females provided (1) they are

free from standard disqualifications and (2) they have a family average egg production and egg weight equal to or better than the family average for all the daughters of the sire mate.

The sons from such matings may be eligible to qualify as U. S. R. O. P. males after their sires and dams qualify for U. S. R. O. M., provided they are reasonably good representatives of the breed and variety as designated in the American Standard of Perfection.

Par. 24. **U. S. R. O. P. hatching eggs.**—U. S. R. O. P. hatching eggs shall come only from U. S. R. O. P. matings. Such eggs offered for sale shall weigh at least 2 ounces each and 25 ounces or more to the dozen except that no minimum weight requirements shall apply to eggs from U. S. R. O. M. dams. Each egg shall bear the U. S. R. O. P. number of the hen that laid it and the number of the mating.

Par. 25. When U. S. R. O. P. hatching eggs are transferred from one U. S. R. O. P. breeder to another U. S. R. O. P. breeder or hatcheryman for the purpose of hatching U. S. R. O. P. chicks, the conditions that shall govern such a transaction include the following: (*a*) The U. S. R. O. P. breeder who sells U. S. R. O. P. hatching eggs must send a report in triplicate at the time the eggs are shipped consisting of a list of eggs sold, the pen or sire number and dam number of each egg, and the egg production, average egg weight, and body weight of each dam, to the official State agency of his State. If the eggs are shipped outside the State, these records shall be attested to by the R. O. P. supervisor, who shall retain one copy and mail one copy to the purchaser and one to the official State agency of the State to which the eggs are shipped. (*b*) Within 5 days after hatching time the U. S. R. O. P. breeder or hatcheryman who purchased the eggs must send to his official State agency a list of the chicks hatched from each dam and their respective wing-band numbers.

Par. 26. **U. S. R. O. P. chicks.**—They shall come only from U. S. R. O. P. eggs. The chicks from each female shall be hatched separately in pedigree baskets or sacks and shall be banded individually with sealed and numbered official wing bands at the time of removal from pedigree baskets or sacks. Such bands shall be stamped with the letter "U. S. R. O. P." and shall be so numbered as to permit no two chicks on the same breeder's farm being identically numbered. When eggs are incubated to produce U. S. R. O. P. chicks, an accurate record of the number of eggs from each hen with her pen number and a record of all chicks banded shall be furnished the R. O. P. supervisor on N. P. I. P. Form 8, or a substitute form, at the end of each four hatches. The chicks shall be subject to inspection at any time. The bands from dead chicks shall be retained for the information of the inspector and shall be furnished to him on request.

Par. 27. U. S. R. O. P. eggs and chicks may be produced only on a U. S. R. O. P. breeder's premises except that with the approval of the official State agency (*a*) a U. S. R. O. P. breeder may have eggs hatched by any hatchery operating under the plan provided the U. S. R. O. P. breeder does the pedigreeing of the chicks; and (*b*) a U. S. Approved or U. S. Certified hatchery owner may produce U. S. R. O. P. chicks from purchased U. S. R. O. P. eggs for the use of his hatchery-flock owners only, provided proper records of purchases are sent to the official State agency and a State inspector does the wing-banding of these chicks.

Par. 28. When U. S. R. O. P. chicks, cockerels, or mature birds are sold or transferred by members of the industry participating in the plan, the individual making the sale must send a report in triplicate to the official State agency at the time these products are shipped giving the number of birds sold; the number, egg production, average egg weight, and body weight of each dam; and the pen or leg-band number of the sire of each chick, cockerel, or mature bird. If the chicks, cockerels, or mature birds are shipped outside the State, these records shall be attested to by the R. O. P. supervisor, who shall retain one copy and mail one copy to the purchaser and one to the official State agency of the State to which these products are shipped.

Par. 29. The use of the letters R. O. P. alone or in combination with any other words or letters on wing bands or leg bands is limited to U. S. R. O. P. chicks, qualified males, and qualified females.

Par. 30. **Duties of R. O. P. supervisor.**—The R. O. P. supervisor shall represent the official State agency in its supervision of U. S. R. O. P. work, and he shall vouch for the accuracy of all U. S. R. O. P. and U. S. R. O. M. records made by U. S. R. O. P. breeders under his jurisdiction. He shall keep on file in his office for at least 5 years, (*a*) a record of all qualified males, with at least one-generation pedigree showing egg records and egg weights of the female ancestors, and (*b*) a record of all qualified females with their egg records and egg weights for their first year of production. He shall also keep on file a record of all U. S. R. O. P. matings and all U. S. R. O. P. chicks with at least one-generation pedigree.

Par. 31. The R. O. P. supervisor shall furnish the Bureau of Animal Industry, for publication, a summary of the U. S. R. O. P. work under his supervision each year, which shall include the following information for each flock.

(*a*) Total number of pullets of that particular breed on the farm.

(*b*) Number of pullets originally trap-nested for the U. S. R. O. P. entry.

(*c*) Number of pullets withdrawn during trial period.

(*d*) Number of pullets entered in U. S. R. O. P.

(*e*) Number of pullets entered in U. S. R. O. P. which are individually pedigreed.

(*f*) Number meeting the U. S. R. O. P. requirements.

(*g*) Percentage of birds entered meeting the U. S. R. O. P. requirements.

(*h*) Number of birds qualifying which lay from 200 to 249 eggs.

(*i*) Number of birds qualifying which lay 250 to 299 eggs.

(*j*) Number of birds qualifying which lay 300 or more eggs.

(*k*) Average egg production of all birds entered.

(*l*) Average egg weight of all birds entered.

(*m*) Average body weight of all birds entered.

Par. 32. The R. O. P. supervisor may bring charges to the official State agency of his State against any U. S. R. O. P. breeder for falsifying records, for unethical conduct in his business methods, or for any other cause which he may consider detrimental to U. S. R. O. P. work. On such charges being proved in a fair hearing, the offending breeder must be reprimanded or suspended by the official State agency according to the nature of the offense.

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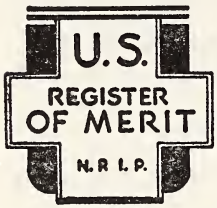
Par. 33. **Duties of R. O. P. inspector.**—The R. O. P. inspector shall work under the direction of the R. O. P. supervisor. It shall be his duty to visit and inspect the work of each U. S. R. O. P. breeder at least five times each year, his visits to be so timed that each season of the year shall be represented in his reports, and at least three of these visits shall be unannounced. On each visit he shall do the trap-nesting for the day and shall record all eggs laid, and during the official egg-weighing period for the breeder shall weigh and record the weight of the eggs laid by each individual bird entered in U. S. R. O. P. Each inspection shall include the trap-nesting of all pens of U. S. R. O. P. candidates of a U. S. R. O. P. breeder. He shall examine hens apparently out of production to see that they are not being credited with eggs. During the breeding season he shall examine all birds in U. S. R. O. P. matings to see that the birds which constitute these matings are properly listed with the supervisor. He shall compare the number of eggs being incubated from each hen with the number she is credited with having laid during the corresponding period, and shall have authority to test these eggs for fertility. When the hatch is reported he shall compare his findings with the number of chicks reported hatched and wing-banded. An annual inspection of pedigreed hatching facilities, methods, and chick-banding techniques shall be made on each R. O. P. farm at time of wing banding.

He shall be courteous to breeders at all times but shall be on the alert to discover errors in records or violations of rules, intentional or otherwise. He shall immediately report to the supervisor any suspicious circumstances or appearance of fraud in the records or business dealings of a U. S. R. O. P. breeder.



Reg. U. S. Patent Office

(PURPLE)

FIGURE 4.—Design authorized to identify U. S. R. O. M. sires, dams, and matings.

SECTION 5. U. S. REGISTER OF MERIT BREEDING STAGE

Paragraph 1. The progeny records for one breeding season only shall be considered in determining the qualifications of sires and dams for the U. S. Register of Merit breeding stage. Records obtained on the premises of two or more cooperating U. S. R. O. P. breeders may be used in qualifying U. S. R. O. M. sires and dams.

Par. 2. **U. S. R. O. M. sire.**—A U. S. R. O. M. sire is a male which, when used in a supervised single-male mating, has at least one-half and a minimum of 20 of his daughters that are entered in U. S. R. O. P. qualify.

Par. 3. **U. S. R. O. M. dam.**—A U. S. R. O. M. dam is a female which, when used in a supervised single-male mating, has at least one-half and a minimum of four of her daughters entered in U. S. R. O. P. qualify.

Par. 4. **U. S. R. O. M. honor roll sire.**—A U. S. R. O. M. sire whose daughters had a family average egg weight of 24 or more ounces per dozen, and a hen-housed family average egg production as follows:

Number of daughters:	Egg production in 300 days (Percent)	Egg production in 365 days (Number)	Number of daughters:	Egg production in 300 days (Percent)	Egg production in 365 days (Number)
40 or more	60. 0	200	32	66. 0	219
39	60. 6	202	31	66. 6	222
38	61. 3	204	30	67. 6	225
37	62. 0	206	29	69. 0	230
36	62. 3	208	28	70. 6	235
35	63. 0	210	27	72. 0	240
34	64. 0	213	26	73. 6	245
33	65. 0	216	25	75. 0	250

Par. 5. **U. S. R. O. M. honor-roll dam.**—A U. S. R. O. M. dam whose daughters had a family average egg weight of 24 or more ounces per dozen, and a hen-housed family average egg production as follows:

Number of daughters:	Egg production in 300 days (Percent)	Egg production in 365 days (Number)
8 or more	60. 0	200
7	63. 0	210
6	67. 6	225
5	75. 0	250

Par. 6. **U. S. R. O. M. matings.**—These matings shall be comprised of U. S. R. O. M. females, or U. S. R. O. P. females from U. S. R. O. M. families (i. e., either their sire or dam qualified for U. S. R. O. M.) mated to a U. S. R. O. M. male or a son of a U. S. R. O. M. male.

ARTICLE 3. PERFORMANCE TEST

SECTION 1. MEAT PRODUCTION TEST

REGULATION 1.—Any participant in the National Poultry Improvement Plan may enter the meat-production test. Entrants will not be given an official classification as a result of their participation in the meat production test, but a summary covering the items listed in paragraph 10 of this section will be published annually by the Bureau of Animal Industry.

Paragraph 1. The breeder may carry on any breeding program desired through which he expects to develop poultry superior in meat producing qualities.

Par. 2. One hundred or more February-, March-, or April-hatched pullets selected at random at 4 to 6 months of age from the female parent stock, and 300 or more straight-run chicks selected at random from those produced by the breeder's multiple-male matings shall constitute an entry.

Par. 3. The pullets shall be selected by, or under the direct supervision of the State inspector, and housed in a separate pen or pens where accurate daily pen egg production and mortality records shall be kept for a period of 300 days. Egg production shall be computed for the test flock on both the "hen-housed" and "hen-day" bases.

Par. 4. The State inspector shall make a minimum of six unannounced inspections and make an accurate check of the number of eggs laid on the day of inspection. He shall also weigh the eggs laid on the day of inspection.

Par. 5. The average egg weight shall be computed from the weights of the eggs gathered by the State inspector.

Par. 6. Hatchability shall be determined by the State inspector at the time the chicks are selected by checking at random the hatchability of at least 1,000 eggs set from the breeder's multiple-male matings.

Par. 7. The chicks shall be selected and banded with official sealed and serially numbered wing bands at hatching time by or under the direct supervision of the State inspector. They shall be floor brooded to 10 weeks of age, with no more than 1½ square feet of floor space per bird. Accurate mortality records shall be kept during the 10-week test period.

Par. 8. At 10 weeks of age, each bird raised shall be handled by the State inspector, and individual body weights shall be recorded by sex. At this time a minimum of 50 cockerels shall be selected at random by wing-band number—e. g., all male chicks with even, numbered band—and shall be dressed under the supervision of the State inspector. The following data shall be obtained by or under the direct supervision of the State inspector:

(*a*) New York dressed weight of entire lot.

(*b*) Eviscerated weight of entire lot, when possible.

(*c*) Breast angle of each dressed bird, obtained with a standard breast measuring device approved by a special committee of the NPIP. (Official State agencies will be kept informed as to the measuring device approved.)

(*d*) Length in inches of keel of each bird.

(*e*) Number of birds of Grade A, B, and C, for fleshing.[2]

(*f*) Number of birds of Grade A, B, and C, for finish.[2]

(*g*) Number of birds of Grade A, B, and C, for freedom from pinfeathers.[2]

(*h*) Number of birds rejected owing to: Crooked or dented keel, hunchback, misshapen bones, callouses and blisters, scabby or discolored backs, black, blue, or green color showing through skin.

Par. 9. The entire entry shall be disqualified by any misrepresentation, falsification, or use of artificial practices (except lights), such as plumping, hormones, etc.

Par. 10. At the end of the test, and no later than September 15, the State inspector shall submit to the Bureau of Animal Industry for publication the following summary for each entry:

(*a*) Breed and variety or cross.

(*b*) Number of chicks started.

(*c*) Mortality to 10 weeks of age.

(*d*) Average 10-week weight and variability of all pullets.

(*e*) Average 10-week weight and variability of all cockerels.

(*f*) Number of cockerels dressed.

(*g*) Average live weight of dressed cockerels at the farm.

(*h*) Average New York dressed weight before chilling.

(*i*) Average eviscerated weight, if available.

(*j*) Average breast angle.

(*k*) Average length of keel.

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[2] The grading of these birds will be based on the specifications for U. S. grades of poultry in the publication, "Regulations Governing the Grading and Inspection of Poultry and Domestic Rabbits."

(*l*) Number of Grade A, B, and C carcasses, based on fleshing.
(*m*) Number of Grade A, B, and C carcasses, based on finish.
(*n*) Number of Grade A, B, and C carcasses, based on freedom from pin feathers.
(*o*) Number of birds rejected.
(*p*) Number of pullets housed for the test.
(*q*) Adult mortality for 300 days.
(*r*) Hen-housed average egg production of female parent stock for 300 days.
(*s*) Hen-day average egg production of female parent stock for 300 days.
(*t*) Average egg weight of female parent stock.
(*u*) Hatchability of eggs of female parent stock.
(*v*) Breeding stage.
(*w*) Pullorum class.

ARTICLE 4. PULLORUM-CONTROL AND ERADICATION CLASSES

SECTION 1. GENERAL PROVISIONS

Paragraph 1. The official State agency shall assume responsibility for the accuracy of the pullorum-testing work done.

Par. 2. All chickens to be used as breeders must be tested for pullorum disease when more than 5 months of age by means of one of the three official tests. Reactors must be romoved from the premises on the completion of the test, and the premises must immediately be carefully cleaned and disinfected to the satsifaction of the official State agency.

Since only birds to be used as breeders are required to be tested, when other birds are kept on the same premises, ample provision must be made to keep these birds and their eggs separate.

Par 3. The official test for pullorum disease in the plan shall be one of the following agglutination tests:

(*a*) The standard tube agglutination test;
(*b*) The stained-antigen, rapid, whole-blood test or such other rapid, whole-blood test as may be approved by the Bureau of Animal Industry, United States Department of Agriculture;
(*c*) The rapid serum test.

Procedures for conducting these tests are described in the Appendix to this publication. Modifications from these procedures may be made operative by an official State agency upon approval of the Bureau of Animal Industry, United States Department of Agriculture.

Par. 4. Each lot of antigen used in the whole-blood testing (see par. 3 (*b*)) for pullorum disease shall be approved by the Bureau of Animal Industry, United States Department of Agriculture.

Par. 5. All tests with pullorum or typhoid antigens of flocks in any pullorum class or candidates for any pullorum class must be reported to the official State agency within 10 days following the completion of such tests. All reactors shall be considered in determining the official classification of the flock except reactors to variant or polyvalent antigen that are negative to tests with standard type antigen.

Par. 6. All domesticated fowl such as turkeys, ducks, geese, pheasants, guineas, pea fowl, bantams, etc., shall either be properly tested

to meet the same pullorum tolerance as the breeding flock of chickens, or be segregated from the breeding flock of chickens at all stages of development and during all seasons of the year.

Par. 7. When more than one breeding flock of chickens is maintained on the same premises, all such flocks shall be given an official pullorum classification no higher than the lowest classification attained by any one of the flocks.

Par. 8. Ducks meeting the requirements for a pullorum classification may be given the same official recognition that is given chickens.

Par. 9. In order that a flock may qualify as U. S. Pullorum-Controlled, or U. S. Pullorum-Passed, the testing of the birds for pullorum disease shall be done by a State pullorum tester or a pullorum-testing agent. When the testing is done by a pullorum-testing agent, a representative of the official State agency shall check-test a sufficient number of birds to satisfy the official State agency that the hatchery pullorum control program meets the requirements for the U. S. Pullorum-Controlled or U. S. Pullorum-Passed classification.

Par. 10. In order that a flock may qualify as U. S. Pullorum-Clean, the testing of the birds for pullorum disease shall be done by a State pullorum tester, or pullorum-testing agent, satisfactory to the official State agency, provided that when the testing is done by a pullorum-testing agent, a representative of the official State agency shall check-test 15 percent or more of the birds in each of 35 percent or more of the flocks tested by the agent or agents for each hatchery to satisfy the official State agency the testing work was satsifactory. Hatcheries that have had a U. S. Pullorum-Clean rating for 1 year or longer may satisfy their check-testing requirements when a representative of the official State agency check-tests 15 percent or more of the birds in each of 15 percent or more of the flocks tested by each testing agent.

If the check-tested birds in the supply flocks of a U. S. Pullorum-Clean hatchery, or in flocks for which application for this classification is made, show more than two-tenths of 1 percent of pullorum reaction, the hatchery shall retest all hatchery supply flocks and either drop all flocks in which check-testing and retesting reveals reactors, or retest such flocks as provided in article 4, section 4, paragraph 1. Failure to do this shall cause the hatchery to lose its pullorum-clean rating.

Par. 11. In the event that tests to qualify or requalify flocks as U. S. Pullorum-Passed or U. S. Pullorum-Clean reveal any reactors, the owner, or the official State agency, shall have the right to request that all reactors if 5 or less, or 20 percent of all reactors with a minimum of 5 and a maximum of 20, be submitted to a laboratory designated by the official State agency for autopsy and bacteriological examination. In case such bacteriological examination fails to reveal any conclusive evidence of pullorum infection, the flock shall be construed as having had no pullorum. All reactors not slaughtered for bacteriological examination shall be removed and disposed of in a manner satisfactory to the official State agency. The recommended minimum procedure for the bacteriological examination of pullorum reactors is described in the Appendix of this publication.

Par. 12. If evidence indicates that pullorum disease or fowl typhoid outbreaks are occurring in chicks, the official State agency may, at its

discretion, require additional retesting of the flock or flocks, or make further autopsies and bacteriological examinations.

Par. 13. After a flock has been classified as U. S. Pullorum-Controlled or U. S. Pullorum-Passed by the official State agency, the results of any retesting of such flock during the current breeding and hatching season shall not adversely affect its pullorum classification for that season, except that if in the opinion of the official State agency the amount of reaction found in any flock or flocks is such as to be dangerous or detrimental to the operation of the plan, the official State agency shall require that such flock or flocks be retested after an interval of at least 30 days or that such flocks be immediately discontinued as hatching-egg flocks. Furthermore, in such cases the official State agency may require that the hatching eggs from such flocks be removed from the incubator and destroyed prior to hatching.

Par. 14. Chickens more than 5 months of age may not be added to U. S. Pullorum-Passed or U. S. Pullorum-Clean flocks except after the approval of the official State agency. Such birds from only U. S. Pullorum-Passed or U. S. Pullorum-Clean flocks may be added to U. S. Pullorum-Passed flocks, and only those birds from U. S. Pullorum-Clean flocks may be added to U. S. Pullorum-Clean flocks. The number of chickens more than 5 months of age and the name and address of the person from whom the purchase is to be made shall be furnished the official State agency. In moving these birds from one farm to another, due precaution should be taken to use clean, sanitary coops.

Par. 15. In the case of U. S. Pullorum-Controlled, U. S. Pullorum-Passed, and U. S. Pullorum-Clean flocks, all birds which are returned to the premises from poultry exhibits or egg-laying tests or which have been removed from the premises for any purpose whatsoever shall be quarantined for at least 30 days and officially tested at the time of their return and again at least 30 days later, and any reactors shall be removed immediately after each test. In the event reactors are found such birds shall not be added to a U. S. Pullorum-Clean flock until they have passed two negative tests at least 30 days apart, and shall not be added to a U. S. Pullorum-Passed flock until they have passed one negative test for pullorum disease, each retest being at least 30 days apart.

Par. 16. The custom hatching of eggs from nonparticipating flocks is permitted in U. S. Pullorum-Controlled hatcheries, provided the incubation and hatching of such eggs are done in a separate room as described in paragraph 17, page 23. The custom hatching of eggs from flocks of a lower pullorum class than U. S. Pullorum-Passed is not permitted in a U. S. Pullorum-Passed Hatchery. The custom hatching of eggs from flocks of a lower pullorum class than U. S. Pullorum-Clean is not permitted in a U. S. Pullorum-Clean hatchery. Beginning July 1, 1952, the custom hatching of eggs from nonparticipating flocks is not permitted in participating hatcheries.

Par. 17. In separating a room for the use of two or more incubators, to provide for custom hatching, a tight partition is absolutely necessary and must be provided. Outside ventilation and an outside entry for each room are required. Any door or opening between the two rooms must be sealed, as by weather stripping and locking, or

by battening the cracks around the door in the room where eggs from nonparticipating flocks are being incubated or hatched.

Par. 18. A participant in any phase of the plan may not incubate or hatch turkey eggs in the same room in which he hatches chicken eggs unless the turkey eggs are of the same or higher pullorum classification.

Par. 19. In the event that eggs other than chicken or turkey eggs are to be incubated or hatched by a hatchery, such eggs shall be either produced by flocks that have been properly tested to meet at least the minimum pullorum tolerance of the hatchery or be hatched in separate rooms in accordance with paragraph 17 of this section.

Par. 20. Hatcheries participating in the pullorum classes only shall be inspected as prescribed by regulation 12, page 5.

Par. 21. Each year at least 15 percent of the flocks participating in the pullorum classes only shall be inspected and approved by a State inspector. Field testing or blood collecting by a State pullorum tester or a State inspector shall be regarded as an official flock inspection provided a complete inspection is made and so reported.

SECTION 2. U. S. PULLORUM-CONTROLLED CLASS

Paragraph 1. **U. S. Pullorum-Controlled flocks.**—These flocks shall meet the following requirements: (*a*) All chickens to be used as breeders shall be tested for pullorum disease when more than 5 months of age, under the supervision of an official State agency, and shall contain fewer than 2 percent of reactors, the last test being made within 12 months immediately preceding the date of sale of hatching eggs or chicks from such flocks; (*b*) all indicated carriers of pullorum disease shall be removed from the premises on completion of the test and disposed of in a manner satisfactory to the official State agency;

Reg. U. S. Pat. Off.

(YELLOW)

FIGURE 5.—Design authorized to identify U. S. Pullorum - Controlled hatching eggs, chicks, flocks, and hatcheries.

(*c*) all birds remaining in the flocks shall be properly leg-banded;

(*d*) individual birds introduced into U. S. Pullorum-Controlled flocks shall have passed, within 12 months, a negative official test for pullorum disease.

Par. 2. A flock containing 2 percent or more of reactors on the first test on being retested at intervals of not less than 30 days, and all reactors removed after each test until the percentage of reactors is less than 2, may qualify as a U. S. Pullorum-Controlled flock.

Par. 3. **U. S. Pullorum-Controlled hatching eggs.**—Such eggs are from officially tested birds in U. S. Pullorum-Controlled flocks.

Par. 4. **U. S. Pullorum-Controlled chicks.**—These are hatched from eggs produced by U. S. Pullorum-Controlled, U. S. Pullorum-Passed, or U. S. Pullorum-Clean flocks, in a U. S. Pullorum-Controlled hatchery.

Par. 5. **U. S. Pullorum-Controlled hatcheries.**—These hatcheries operate under the supervision of an official State agency and (1) buy or sell chicken or turkey hatching eggs, (2) incubate and hatch chicken or turkey eggs, (3) brood or sell chick or poults, or (4) are dealers in or agents for such products from only U. S. Pullorum-Con-

trolled, U. S. Pullorum-Passed, or U. S. Pullorum-Clean flocks and hatcheries, except that custom hatching may be carried on under the conditions prescribed in article 4, section 1, paragraphs 16 and 17.

SECTION 3. U. S. PULLORUM-PASSED CLASS

Paragraph 1. **U. S. Pullorum-Passed flocks.**—These flocks shall meet the following requirements: All chickens to be used as breeders shall be tested for pullorum disease when more than 5 months of age under the supervision of an official State agency, shall be officially leg-banded, and shall contain no reactors, the last test being made within the testing year immediately preceding the date of sale of hatching eggs or chicks from such flocks.

Reg. U. S. Pat. Off.

(RED)

FIGURE 6.—Design authorized to identify U. S. Pullorum-Passed hatching eggs, chicks, flocks, and hatcheries.

Par. 2. **U. S. Pullorum-Passed hatching eggs.**—Such eggs are from officially tested birds in U. S. Pullorum-Passed flocks.

Par. 3. **U. S. Pullorum-Passed chicks.**—These are hatched in a U. S. Pullorum-Passed hatchery from eggs produced by U. S. Pullorum-Passed or U. S. Pullorum-Clean flocks.

Par. 4. **U. S. Pullorum-Passed hatcheries.**—These hatcheries operate under the supervision of an official State agency and (1) buy or sell chicken- or turkey-hatching eggs, (2) incubate and hatch chicken or turkey eggs, (3) brood or sell chicks or poults, or (4) are dealers in or agents for such products from only U. S. Pullorum-Passed or U. S. Pullorum-Clean flocks and hatcheries.

SECTION 4. U. S. PULLORUM-CLEAN CLASS

Paragraph 1. **U. S. Pullorum-Clean flocks.**—These flocks shall meet the following requirements: (*a*) All chickens to be used as breeders shall be tested for pullorum disease when more than 5 months of age, under the supervision of an official State agency, shall be officially leg-banded, and shall contain no reactors either in two consecutive tests not less than 6 months apart, or in three consecutive tests not less than 30 days apart, the last being made within the testing year immediately preceding the date of sale of hatching eggs or chicks from such flocks; (*b*) once a flock is established as U. S. Pullorum-Clean it remains so as long as no reactors are found in any test of birds used as breeders; (*c*) flocks developed exclusively from U. S. Pullorum-Passed or U. S. Pullorum-Clean chicks may be recognized as U. S. Pullorum-Clean flocks if no reactors are found on the first and any subsequent test conducted under the supervision of the official State agency; (*d*) in order that a flock may retain a U. S. Pullorum-Clean classification all purchases of baby chicks must be from U. S. Pullorum-Passed or U. S. Pullorum-Clean sources. This requirement applies to chicks to

Reg. U. S. Pat. Off.

(BLUE)

FIGURE 7.—Design authorized to identify U. S. Pollorum-Clean hatching eggs, chicks, flocks, and hatcheries.

be raised for meat production purposes as well as for breeding stock.

Par. 2. When not more than one-half of 1 percent, but in no case not more than four reactors are found in a flock having a U. S. Pullorum-Clean rating, one retest with no reactors of the unit or units involved followed by a retest with no reactors of the entire breeding flock may be used at the discretion of the official State agency in requalifying a flock for the U. S. Pullorum-Clean class. The retest shall be made at intervals of not less than 30 days, nor more than 6 weeks apart. Such a flock shall temporarily lose its status as U. S. Pullorum-Clean and, until requalification, chicks or hatching eggs from the flock shall not be represented to be U. S. Pullorum-Clean.

Par. 3. **U. S. Pullorum-Clean hatching eggs.**—Such eggs are from officially tested birds in U. S. Pullorum-Clean flocks.

Par. 4. **U. S. Pullorum-Clean chicks.**—These are hatched in a U. S. Pullorum-Clean hatchery from eggs produced by U. S. Pullorum-Clean flocks.

Par. 5. **U. S. Pullorum-Clean hatcheries.**—These hatcheries operate under the supervision of an official State agency and (1) buy or sell chicken- or turkey-hatching eggs, (2) incubate and hatch chicken or turkey eggs, (3) brood or sell chicks or poults, or (4) are dealers in or agents for such products from only U. S. Pullorum-Clean flocks or hatcheries.

APPENDIX

OFFICIAL TESTING FOR PULLORUM DISEASE

For the benefit of active workers in laboratory and field, suggested techniques for conducting the three recognized methods of testing are described:

The Standard Tube Agglutination Test [1]

Collection and delivery of blood samples.—The blood samples shall be taken by properly qualified and authorized persons only, and in containers provided by the diagnostic laboratory or other authorized agent. The containers should be stout-walled test-tubes preferably ⅜ by 3 inches, without lip, or small well-selected medicine vials, which have been thoroughly cleaned and dried, in a hot-air drying oven. If stoppers are used they should be thoroughly cleaned and dried. All birds must be officially banded with bands supplied by the control agency.

Sufficient blood should be procured by making a small incision in the large median wing vein, with a small sharp lancet, and allowing the blood to run into the tube, or by the use of a small syringe (with 20 or 21 gage needle), which is properly cleansed between bleedings with physiological saline solution. To facilitate the separation of the serum the tubes are placed in a slanted position until the blood has solidified. After the blood has completely clotted, they are packed and shipped by mail (special delivery), rapid express, or by messenger, to the laboratory. All labeling must be clear and permanent, and may be done with a suitable pencil on etched portions of the tube, or by means of fast-gum labels.

The blood samples must reach the laboratory in a fresh and unhemolyzed condition. Hemolyzed samples should be rejected. It is imperative, therefore, to cool the tubes immediately after slanting and clotting, and unless they reach the laboratory within a few hours, to pack them with ice in special containers, or by some other cooling system which will insure their preservation during transportation. In severe cold seasons, extreme precautions must be exercised to prevent freezing and consequent laking. The samples must be placed in cold (5° to 10° C.) storage, immediately upon arrival at the laboratory.

Preparation of antigen.—The antigen shall consist of representative strains of *S. pullorum* which are of known antigenic composition, high agglutinability,

[1] The procedure described is a modification of the method reported in the Proceedings of the United States Live Stock Sanitary Association, November 30 to December 2, 1932, pp. 487 to 491.

but are not sensitive to negative and nonspecific sera. A satisfactory medium which has been used for a long time has the following composition:

Water	1,000 cc.
Difco beef extract	4 gm. (0.4 percent).
Difco Bacto-peptone	10 gm. (1.0 percent).
Dry-granular agar (Difco)	20 gm. (2.0 percent).
Reaction-pH 6.8 to 7.2.	

Large 1-inch test tubes, Kolle flasks or Blake bottles are streaked liberally over the entire agar surface with inoculum from 48-hour slant-agar cultures prepared from the stock cultures of the selected strains. The stock cultures may be maintained satisfactorily by transferring to new sloped agar at least once a month and keeping at 18° to 25° C. (average room temperature) in a dark closet or chest, following incubation for from 24 to 36 hours at 37° C. The antigenic composition and purity of the stock cultures should be checked consistently. The antigen-growing tubes or bottles are incubated 48 hours at 37° C. and the surface growth washed off with sufficient phenolized (0.5 percent) saline (0.85 percent) solution to make a heavy suspension or very light paste. The washings are filtered through lightly packed sterile absorbent cotton placed in the apex of a sterile funnel. The antigens of the separate strains should be combined in equal volume-density and stored in the refrigerator (5° to 10° C.) in tightly stoppered bottles.

The dilute antigen to be used in the routine testing is prepared from the stock antigen by dilution of the latter with physiological (0.85 percent) saline (C. P.) solution containing 0.25 percent of phenol (C. P.) to a turbidity corresponding to 0.75–1.00 on the McFarland nephelometer scale. The hydrogen-ion concentration of the dilute antigen is corrected to pH 8.2 to 8.5 by the addition of dilute sodium hydroxide. New dilute antigen should be prepared each day and kept cold. The diluted antigen may be employed in 2 cc. quantities in 4- by ½-inch test tubes or 1 cc. quantities in smaller tubes in which the final serum-antigen mixtures are made and incubated. The distribution of the antigen in the tubes may be accomplished by the use of long burettes, or special filling devices made for the purpose.

Serum dilutions, incubation, etc.—The maximum dilutation employed must not exceed 1:50 for chickens nor 1:25 for turkeys. The available data indicate that 1:25 dilution is the most efficient. In all official reports on the blood test the serum dilutions shall be indicated. The sera are introduced into the agglutination tubes in the desired amounts with well-cleaned serological pipettes or special serum-delivery devices which do not permit the mixing of different sera. The antigen and serum should be well mixed before incubation. The serum and antigen mixture must be incubated for at least 20 hours at 37° C.

Interpretation of results.—The results should be recorded as:

N, or —, when the tube remains uniformly turbid and there is no distinct settling of antigen.

P, or P +, when there is a distinct clumping of the antigen, and the liquid between and above the agglutinated particles is clear (4+).

S, when the agglutination is only partial or incomplete (1+ to 3+).

M, or missing, when samples listed on the original record sheet are missing.

H, or hemolyzed, when the blood samples are hemolyzed and unsatisfactory for the test.

B, or broken, when the sample tubes are broken on arrival, and no serum is obtained.

Some allowance must always be made for the difference in sensitiveness of different antigens and different set-ups, and therefore a certain amount of independent intelligent judgment must be exercised at all times. Also, the histories of the flocks require consideration.

The Rapid Serum Test [2]

Collection and delivery of blood samples.—See p. 26 under The Standard Tube Agglutination Test.)

Preparation of antigen.—The antigen shall consist of representative strains of S. pullorum which are of known antigenic composition, high agglutinability,

[2] The procedure described is a modification of the method reported by Runnels, Coon, Farley, and Thorpe, Amer. Vet. Med. Assoc. Jour. 70 (N. S. 23) : 660–662 (1927).

but are not sensitive to negative and nonspecific sera. A satisfactory medium which has been used for a long time has the following composition.

Water	1,000 cc.
Difco beef extract	4 gm. (0.4 percent).
Difco Bacto-peptone	10 gm. (1.0 percent).
Dry-granular agar (Difco)	20 gm. (2.0 percent).

Reaction-pH 6.8 to 7.2.

Large 1-inch test tubes, Kolle flasks or Blake bottles are streaked liberally over the entire agar surface with inoculum from 48-hour slant-agar cultures prepared from stock cultures of the selected strains. The stock cultures may be maintained satisfactorily by transferring to new sloped agar at least once a month and keeping at 18° to 25° C. in a dark closet or chest, following incubation for from 24 to 36 hours at 37° C. The antigenic composition and purity of the stock cultures should be checked consistently.

The antigen-growing tubes or bottles are incubated 48 hours at 37° C. and the surface growth washed off with a very slight amount of 12 percent solution of sodium chloride containing 0.25 to 0.5 percent phenol, filtered through lightly packed sterile absorbent cotton placed in the apex of a sterile funnel. The washings are adjusted (using 12 percent sodium chloride containing 0.25 to 0.5 percent phenol), so that the turbidity is 50 times greater than tube 0.75 of McFarland's nephelometer or to a reading of 7 mm. by the Gates nephelometer. The individual strain antigens should be tested with negative sera for their insensitivity and with positive sera for high agglutinability in comparison with known satisfactory antigen. The antigens of the separate strains should be combined in equal volume-density and stored in the refrigerator (5° to 10° C.) in tightly stoppered bottles.

Setting up tests.—The tests are conducted on a suitable, smooth plate. The serum-antigen dilution is made so that the dilution will not exceed 1:50 when compared to the Standard Tube Agglutination test. When testing turkey blood samples it is desirable to use a serum-antigen dilution equivalent to the 1:25 in the tube method. The serum is added to the antigen and mixed thoroughly by use of the tip of the serum pipette. Most strong positive reactions will be plainly evident within 15 to 20 seconds. The final reading is made at the end of 2 or 3 minutes. Heating the plate at approximately 37° C. will hasten agglutination. Before reading, the plate should be rotated several times.

Interpretation of results.—The results should be recorded as:

N, or — (negative) when the serum-antigen mixture remains uniformly turbid.

P, or + (positive) when there is a distinct clumping of the antigen, and the liquid between the agglutinated particles is clear (4+).

S, or ?, (suspicious) when the agglutination is only partial or incomplete (1+ to 3+).

M, or missing, when samples listed on the original record sheet are missing.

H, or hemolyzed, when blood samples are hemolyzed and cannot be tested.

B, or broken, when sample tubes are broken and no serum can be obtained.

Allowance should be made for differences in the sensitiveness of different antigens and different set-ups, and therefore a certain amount of independent, intelligent judgment must be exercised at all times. Also, the histories of the flocks require consideration. In flocks where individuals show a suspicious agglutination, it is desirable to examine representative birds bacteriologically to determine the presence or absence of S. pullorum.

The Stained-Antigen, Rapid, Whole-Blood Test[3]

NOTE.—The description of the preparation of the antigen is not herein reprinted because that product is produced only under license from the Secretary of Agriculture in accordance with specific directions. The procedure described for conducting the test is a modification of the method reported by Schaffer, MacDonald, Hall, and Bunyea, Jour. Amer. Vet., Med. Assoc. 79 (N. S. 32) : 236–240 (1931).

The loop method.—The loop method is carried out as follows: At the end of a 2½-inch length of noncorrosive wire (Brown and Sharp gage No. 24) a loop three-sixteenths of an inch in diameter is made. For convenience the wire is inserted into a small cork stopper which serves as a handle. It has been found that the blood can be measured rapidly and with sufficient accuracy by

[3] Complete information on this method of testing is contained in Miscellaneous Publication No. 349, The Use of the Rapid, Whole-Blood Test.

use of the wire loop. Such a loop when filled with blood, so that the blood appears to bulge out, delivers 0.02 cc. The antigen is measured by means of a medicine dropper whose tip is adjusted to deliver 0.05 cc. when operated in the vertical position. By this means, the proportion of antigen to blood is kept between the limits of 2 to 1 and 3 to 1, which has been found to give the most satisfactory results. A drop of stained antigen is placed on the glass plate. A loopful of blood is taken up from the wing vein. When submerged in the blood and then carefully withdrawn, the loop comes away properly filled. On looking down edgewise at the filled loop, one observes that the blood appears to bulge out. The loopful of blood is then stirred into the drop of antigen and the mixture spread to a diameter of about 1 inch. The loop is then rinsed in clean water and dried by touching it to a piece of clean blotting paper, if necessary. The test plate is rocked from side to side a few times to mix the antigen and blood thoroughly, and to facilitate agglutination. The antigen should be used according to the directions of the producer. Various degrees of reaction are observed in this as in other agglutination tests. The greater the agglutinating power of the blood the more rapid the clumping and the larger the clumps. A positive reaction consists of a clumping of the antigen in well-developed flocculi surrounded by clear spaces. This reaction is easily distinguished against a white background. A somewhat weaker reaction consists of small but still clearly visible clumps of antigen surrounded by spaces only partially clear. The interpretation of these partial reactions should be the same as that of similar incomplete "tube method" agglutination reactions. Between this point and a negative or homogeneous smear there sometimes occurs a very fine granulation barely visible to the naked eye; this should be disregarded in making a diagnosis.

The very fine marginal flocculation which may occur just before drying up is also regarded as negative. In a nonreactor the smear remains homogeneous. A glass plate about 15 inches square providing space for 48 tests has proved satisfactory for this work. The use of the plate enables the tester to have a number of successive test mixtures under observation without holding up the work to wait for results before proceeding to the next bird.

RECOMMENDED MINIMUM PROCEDURE FOR BACTERIOLOGICAL EXAMINATION OF PULLORUM REACTORS

(1) Pericardial sac, peritoneum, and oviduct are cultured on beef extract agar slants by means of sterile cotton swabs. Sterile technic should be observed. (Primary culture of these organs in beef extract broth and transfer to beef extract agar, optional.)

(2) Ovary or several small, particularly malformed ovarian follicles, gall bladder, ileal contents, and portions of pathologic objects such as cysts, if present, (approximately 1 gram of material per 20 ml. of enrichment medium in 1 inch tubes) are placed into individual tubes of Selenite broth. After 24 hours' incubation at 37° C., a loopful of culture from each tube is streaked on one-third plate of SS agar and Bismuth-Sulfite agar. (Tetrathionate broth with or without 1:200,000 brilliant green, MacConkey's Desoxycholate, and D. C. L. S. agar, optional).

(3) Suspicious single colonies from agar slants and plates are subcultured on agar slants. Cells from the subcultures are transferred to tubes of nutrient carbohydrate broth.

Inoculation into 1-percent tryptone broth for exclusion of indol production and into urea medium (Proc. Soc. Exp. Biol. and Med. 1941, 47: 108) for exclusion of urease activity, is advised.

Nonmotility should be demonstrated (in broth or 0.3 percent semisolid agar cultures).

Twenty-four-hour growth on beef extract agar slants should be used for Gram stains, and, if desired, for slide agglutination tests with known *S. pullorum* antiserums, preferably both S and X types.

(4) Formulas for media:

A. Beef extract agar:

Peptone	10 gm.
Beef extract	4 gm.
Agar	20 gm.
Water	1,000 ml.

Dissolve peptone, and beef extract in water. Adjust to pH 7.0 (at 20° C.). Add agar, heat until agar is dissolved, tube and autoclave.

B. Carbohydrate broth:

Peptone	10 gm.
Beef extract	4 gm.
Bromthymol blue solution (1.6 gm. in 100 ml. of 95 percent alcohol)	2 ml.
Water	1,000 ml.

Dissolve ingredients, divide into four equal portions and add 1 percent of dextrose, lactose, maltose, and sucrose, respectively. Adjust reaction of each medium to pH 7.0 (at 20° C.), tube and sterilize by autoclaving at 10 pounds' pressure for 10 minutes. (Sterilizing carbohydrate solutions by filtration and adding them aseptically to sterile nutrient broth containing BTB indicator, optional).

Most of the media may be obtained in dehydrated form.

MEMORANDUM OF UNDERSTANDING FORM

Memorandum of Understanding between the Bureau of Animal Industry of the U. S. Department of Agriculture and the _____
(Name of official State agency)
covering the cooperative work of the National Poultry Improvement Plan and/or the National Turkey Improvement Plan.

A. The Bureau of Animal Industry of the U. S. Department of Agriculture agrees:

1. To detail poultrymen to be known as Coordinators in charge of the National Poultry Improvement Plan and National Turkey Improvement Plan.

2. To administer the National Poultry Improvement Plan and the National Turkey Improvement Plan in an efficient and uniform manner among all the States where this work is undertaken.

3. To detail additional help in the administration of the National Poultry Improvement Plan and National Turkey Improvement Plan to the extent of funds available and as circumstances render advisable.

4. To pay the salary of such Bureau coordinators and additional help and such traveling expenses as are incurred under Bureau instructions and authorized by the fiscal regulations of the United States Department of Agriculture.

5. To approve all antigen used in the rapid, whole-blood test for pullorum disease.

6. To permit the use of the prefix "U. S." in connection with other terms in describing, advertising, and selling hatching eggs, chicks, poults, and breeding stock of the various breeding stages and pullorum classes when attained and when satisfied that all the rules and regulations of the National Poultry Improvement Plan and/or the National Turkey Improvement Plan have been complied with.

7. To assemble, analyze, and release information on poultry breeding and pullorum disease control that will be of material benefit to the poultry industry.

8. To advise the representatives and leaders of the industry concerning the breeding and disease control problems with which the poultry industry is confronted.

B. _____ the official State agency, agrees:

1. To arrange for and hold a school or schools annually for the purpose of training those who desire to become proficient and qualified to do flock selecting and pullorum testing work.

2. To arrange for the holding of examinations and to authorize candidates who qualify to do flock selecting, blood collecting, and pullorum testing work.

3. To direct, supervise, and be responsible for all the work done relative to flock selection in the various breeding stages and to testing for pullorum as provided for in the National Poultry Improvement Plan and/or the National Turkey Improvement Plan.

4. To require flock-selecting agents, pullorum-testing agents, blood collectors, official State inspectors, R. O. P. supervisors and inspectors to work in cooperation with representatives of the Federal Bureau.

5. To conduct efficiently the inspection work required in the National Poultry Improvement Plan and/or the National Turkey Improvement Plan.

6. To provide for the keeping of accurate and detailed records of all the poultry improvement work done, and to make such records accessible to representatives of the Bureau of Animal Industry of the U. S. Department of Agriculture.

7. To inspect the advertising of all members of the poultry industry within its jurisdiction who are participating in the National Poultry Improvement Plan and/or the National Turkey Improvement Plan for the purpose of ascertaining whether or not they are complying with its provisions.

8. To report to the Bureau of Animal Industry of the U. S. Department of Agriculture any member or members of the poultry industry who have been discontinued from participation due to unsatisfactory compliance or who persistently fail to comply with all the provisions of the National Poultry Improvement Plan or the National Turkey Improvement Plan.

9. To provide the Bureau of Animal Industry with three copies of the current rules and regulations of the official State agency governing poultry improvement work.

10. To provide the Bureau of Animal Industry of the U. S. Department of Agriculture with three blank copies of each record form used by the official State agency in the work of the National Poultry Improvement Plan and/or the National Turkey Improvement Plan.

11. To formulate and have signed contracts or agreements between the official State agency and all participants except flockowners who are affiliated with participating hatcheries.

C. The Bureau of Animal Industry of the U. S. Department of Agriculture and the_____
(Name of official State agency)
agree:

1. That the work of the National Poultry Improvement Plan and/or the National Turkey Improvement Plan shall be cooperative.

2. That representatives of the Bureau of Animal Industry of the U. S. Department of Agriculture may confer with representatives of the official State agency from time to time for the purpose of improving methods in the work, but any deviation or departure from the established practice of the Federal Bureau must receive the approval of the Chief of the Bureau of Animal Industry of the U. S. Department of Agriculture before being adopted.

No member of or delegate to Congress or resident Commissioner shall be admitted to any share or part of this understanding or to any benefit to arise therefrom.

This Memorandum of Understanding shall become effective_____ and shall continue indefinitely but may be modified or discontinued at the request of either party. Requests for termination or any major change shall be submitted to the other party for consideration not less than 90 days in advance of the effective date desired.

In witness whereof the parties hereto have set their hands and seals:

_____ _____
(Date)

_____ _____
(Date)

_____ _____
(Date)

_____ _____
(Date)

Chief, Bureau of Animal Industry,
U. S. Department of Agriculture.

_____ _____
(Date)

Administrator, Agricultural
Research Administration,
U. S. Department of Agriculture.

PROCEDURE FOR MAKING CHANGES IN THE PLAN

The following rules and procedure for making changes in the plan were originally adopted by official delegates at the National Plans Conference held in Cleveland, Ohio, July 18 and 19, 1946, and slightly amended at the conference held in St. Louis, Mo., June 26–29, 1948.

1. Submitting, Compiling, and Distributing Proposed Changes

(*a*) Changes in the provisions of the plan may be proposed by any participant, administrative official of the plan, official State agency, industry organization, or the Bureau of Animal Industry.

(*b*) Proposed changes shall be submitted in writing through the proponent's official State agency, to reach the Bureau of Animal Industry not later than 90 days prior to the opening date of the conference.

(*c*) The name of the proponent shall be indicated on each proposed change when submitted, the proponent in all cases being either an individual or an organization. It is suggested that each proposal shall be accompanied by a brief supporting statement.

(*d*) The Bureau of Animal Industry will notify all persons on the National Poultry Improvement Plan and National Turkey Improvement Plan mailing lists concerning the dates and general procedure of the conference. Hatchery and dealer participants and R. O. P. breeders will be reminded of their privilege to submit proposed changes and to request copies of all the published proposed changes.

(*e*) The proposed changes, together with the names of the proponents and supporting statements, will be compiled by the Bureau of Animal Industry and issued in processed form. When two or more similar changes are submitted, the Bureau will endeavor to unify them into one proposal acceptable to each proponent. Copies will be distributed to State officials of the National Poultry Improvement Plan and the National Turkey Improvement Plan and U. S. R. O. P. breeders. Additional copies will be made available for meeting individual requests.

2. Official Delegates

Each State cooperating in the National Poultry Improvement Plan (N. P. I. P.) shall be entitled to one N. P. I. P. official delegate, and likewise, each State cooperating in the National Turkey Improvement Plan (N. T. I. P.) shall be entitled to one N. T. I. P. official delegate. The official delegates shall be elected by a representative group of participating industry members and be certified by the official State agency. It is further suggested that the recommendations of the industry with respect to each proposed change be obtained and made available to the official delegates prior to the conference.

3. Conducting the Conference

(*a*) *Presiding officer.*—The chairman of the conference as a whole shall be a representative of the Bureau of Animal Industry, U. S. Department of Agriculture.

(*b*) *Committees.*—A General Conference Committee of seven persons shall be selected at the opening session, consisting of the Senior Poultry Coordinator, and one member each from the following regions:

North Atlantic: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida.

East North Central: Ohio, Indiana, Illinois, Michigan, and Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

Western: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

South Central: Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

The committee members will be elected by the official delegates of the respective regions. This committee shall serve until the next National Plans Conference.

The following six committees shall be established to give preliminary consideration to the proposed changes, falling in their respective fields: (1) N. P. I. P. General Provisions, (2) N. P. I. P. Breeding, (3) N. P. I. P. Pullorum-Disease Control, (4) N. T. I. P. General Provisions, (5) N. T. I. P., Breeding, (6) N. T. I. P. Pullorum-Disease Control.

Each official delegate shall be appointed a voting member in one of the above six committees.

Since several of the proposals may be interrelated, the committees shall consider them as they may relate to others, and feel free to discuss related proposals with other committees.

The committees shall make recommendations to the conference as a whole concerning each proposal. The committee report shall show any change in wording, record the vote on each proposal, and suggest an effective date for each proposal recommended for adoption. The individual committee reports

shall be submitted to the Secretary of the Conference, who will combine them into one report showing, in numerical sequence, the committee recommendations on each proposal.

The committee meetings, as well as the general sessions of the conference, shall be open to any interested person. Advocates for or against any proposal should feel free to appear before the particular committee and present their views.

(*c*) *Conference consideration of proposed changes.*—At the time designated for voting on proposed changes by the official delegates, the chairman of the General Conference Committee and the six committee chairmen shall sit at the speaker's table and assist the presiding officer. The proposed changes shall be considered in numerical sequence. Each committee chairman shall present the proposals which his committee approves or recommends for adoption as follows:

"Mr. Chairman. The committee on N. P. I. P. General Provisions recommends the adoption of Proposal No. —, for the following reasons: I move the adoption of Proposal No. —." A second will then be called for. If the recommendation is seconded, discussion and a formal vote will follow. Proposals which the committee does not approve will be presented in the following manner:

"Mr. Chairman. The committee on N. P. I. P. General Provisions does not approve Proposal No. —." The chairman will then ask if any official delegate wishes to move for the adoption of the particular proposal. If moved and seconded, the proposal is subject for discussion and vote. If there is no motion for approval, or if moved, but not seconded, there can no discussion or vote and the proposal is thereby rejected.

(*d*) *Discussion of a motion.*—Discussion on any motion must be withheld until the motion has been properly seconded, except that the delegate making the motion is privileged, if he desires, to give reasons for his motion at the time of making it. To gain the floor for a motion or for discussion on a motion, the official delegate in the case of a motion, or anyone in case of discussion on a motion, shall rise, address the chair, give his name and State, and be recognized by the chair before proceeding further. While it is considered proper to accept motions only from official delegates and to limit voting only to such delegates, it is, however, considered equally proper to accept discussion from anyone interested. To conserve time, discussion should be pointed and limited to the pertinent features of the motion.

(*e*) *New proposals.*—Proposals that have not been published and submitted to the States will be considered by the conference only with the unanimous consent of the General Conference Committee. Any such proposals must be referred to the appropriate committee for consideration before being presented for action by the general conference.

(*f*) *Voting.*—Voting will be by States and each cooperating State will be allowed one vote. Unless otherwise arranged, the N. P. I. P. official delegate or the N. T. I. P. official delegate, as the case may be, will be expected to cast his State's vote.

A roll call of States for a recorded vote will be used when requested by a delegate from the floor or at the discretion of the chairman.

All motions on proposed changes shall be for adoption. This procedure has been found to be less confusing than accepting motions for both adoption and rejection. Aye votes will, therefore, always be for approval of the motion or adoption of the proposal, while nay votes will be for rejection.

(*g*) *Vote necessary for adoption.*—Proposed changes shall be adopted by a majority vote of the official delegates present and voting and shall become effective at the time recommended in the proposal.

ACCEPTANCE OF CONFERENCE RECOMMENDATIONS BY THE BUREAU OF ANIMAL INDUSTRY

Proposals adopted by the official delegates will be recommended to the Chief of the Bureau of Animal Industry, U. S. Department of Agriculture, for incorporation into the provisions of the plans. The Bureau reserves the right to approve or disapprove the recommendations of the conference as an integral part of its sponsorship of the plans.

The coordinators will assume responsibility for revising and editing the National Poultry Improvement Plan and the National Turkey Improvement Plan to include the changes recommended by the conference and approved by the Bureau. The editing will not effect the substance of the proposals agreed upon.

INDEX

	Page
Administration and participation, regulations concerning	4–5
Advertising, regulations concerning	5–7
Agency, official State—	
definition	1
inspection work, regulation concerning	4
Agent—	
flock-selecting, qualifications	2
pullorum-testing, qualifications	2
Agglutination test, standard tube method	26–27
Antigen, preparation of—	
for standard tube agglutination test	26–27
for rapid serum test	27–28
Appendix	26–33
Blood collector, qualifications	2
Blood samples, collection and delivery	26
Breeding houses, cleanliness, regulation concerning	5
Breeding stages—	
general provisions	7–19
U. S. Approved	8–9
U. S. Certified	9–10
U. S. Record of Performance	10–18
U. S. Register of Merit	18–19
Breeding stock—	
body weight	13
definition	3
labeling, regulation concerning	6
Changes in National Poultry Improvement Plan, procedure for making	31–33
Chicks—	
baby, definition	2
crossbred, definition	3
started—	
definition	3
labeling, regulation concerning	6
U. S. Approved	9
U. S. Approved crossbred	8
U. S. Certified	10
U. S. Certified crossbred	8
U. S. Pullorum-Clean	26
U. S. Pullorum-Controlled	24
U. S. Pullorum-Passed	25
U. S. R. O. P.	16
Conference, National Plans—	
conducting of	32–33
recommendations of, acceptance by Bureau of Animal Industry	33
Dams—	
U. S. R. O. M.	18
U. S. R. O. M. honor-roll	19
See also Hens.	
Delegates, official	32
Egg-laying tests, U. S. R. O. P. qualification through	13
Eggs, hatching—	
crossbred, definition	3
records on identity, regulation concerning	6
sale of, regulations concerning	6
shipment of, regulation concerning	6
U. S. Approved	9
U. S. Approved crossbred, regulation concerning	8
U. S. Certified	10
U. S. Certified crossbred	8
U. S. Pullorum-Clean	26
U. S. Pullorum-Controlled	24
U. S. Pullorum-Passed	25
U. S. R. O. P.	16
weight	
minimum	16
regulations concerning	8
Emblem, use of, regulation concerning	6
Females, *see* Dams; Hens.	
Flock(s)—	
definition	3
designation, regulation concerning	6
matings of U. S. R. O. P. males and females	15
owner, qualifications	3
U. S. Approved	8–9
U. S. Approved crossmated	7
U. S. Certified	9–10
U. S. Certified crossmated	7
U. S. Pullorum-Clean	25
U. S. Pullorum-Controlled	24
U. S. Pullorum-Passed	25
Flock-selecting agent, qualifications	2
Hatcheries—	
cleanliness, regulation concerning	5
definition	3
designation, regulation concerning	6
operated under same name, regulation concerning	4
U. S. Approved	9
U. S. Certified	10
U. S. Pullorum-Clean	26
U. S. Pullorum-Controlled	24
U. S. Pullorum-Passed	25

	Page
Hatching eggs, *see* Eggs, hatching.	
Hens—	
U. S. R. O. M., qualifications	18
U. S. R. O. P., qualifications	12
Honor roll—	
U. S. R. O. M. dam, qualifications	19
U. S. R. O. M. sire, qualifications	18
Inbred, definition	3
Inbred line, definition	3
Incrossbred, definition	3
Incubators, cleanliness, regulation concerning	5
Inspector, R. O. P., *see* R. O. P. inspector.	
Inspector, State, qualifications	2
Label, official, definition	3
Leg-banding provisions	5, 9, 12, 17
Males—	
U. S. R. O. M., qualifications	18
U. S. R. O. P., qualifications	14
Matings—	
designation, regulation concerning	6
flock, of U. S. R. O. P. males and females	15
trial	15
U. S. R. O. M.	19
U. S. R. O. P.	14
U. S. R. O. P. candidate	15
Meat production test	19–21
Memorandum of understanding form	30–31
National Poultry Improvement Plan—	
objectives and general regulations	1–7
procedure for making changes in	31
Official delegates	32
Official label—	
definition	3
regulation concerning	6
Performance test	19–21
Pullets, *see* Dams; Hens.	
Pullorum disease—	
control	21–26
eradication classes	24–26
participation in, regulation concerning	6
U. S. Pullorum-Clean	25–26
U. S. Pullorum-Controlled	24–25
U. S. Pullorum-Passed	25
general provisions	21–24
official testing, by—	
rapid serum test	27–28
stained-antigen, rapid, whole-blood test	28–29
standard tube agglutination test	26–27
Pullorum reactors, recommended minimum procedure for bacteriological examination of	29–30
Pullorum tester, State, qualifications	2
Pullorum testing agent, qualifications	2
Regulations, general	4–7
R. O. P. Inspector—	
qualifications	2
duties	18
R. O. P. supervisor—	
qualifications	2
duties	17
Sires—	
U. S. R. O. M., qualifications	18
U. S. R. O. P., qualifications	14
State agency, official definition	1
State inspector, qualifications	2
State pullorum tester, qualifications	2
Supervisor, R. O. P., *see* R. O. P. supervisor.	
Terminology, regulations concerning	5–7
Tester, State pullorum, *see* Pullorum tester, State.	
Turkey eggs, supervision by U. S. Pullorum-Controlled hatcheries	24
Understanding, memorandum of, form	30–31
U. S. R. O. M.—	
breeding stage	18–19
dam, qualifications	18
honor roll—	
dam	19
sire	18
Matings	19
sire, qualifications	18
U. S. R. O. P.—	
breeder—	
qualifications	10
qualification through egg-laying test	13–14
breeding stage	10–18
candidate flock matings	15
chicks	16
females	12
flock matings	15
hatching eggs	16
males	14
matings	14–15
single-male candidate matings	15
trial matings	15
Varieties—	
body weights	13
provisions for keeping separate	8
Wing-banding provisions	5, 9, 13, 14, 17

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